

## Radon transform

1. Acquire an image and perform the Radon transform on it, and reconstruct the image using the commands *radon* and *iradon* respectively, and display the results. Be sure to use enough angle resolution to give reasonable results. Use two different combinations of filters and interpolation in the inverse command and indicate which one gives the best result determined by the lowest mean squared error (MSE) between the original image and the reconstructed image. The MSE is a scalar value that is the sum of  $((\text{original image} - \text{reconstructed image})^2)/(\text{number of pixels in an image})$ .
2. Create an image of a grid with three lines in the horizontal direction, and three in the vertical (white on background). Add noise to the image where the standard deviation of the noise is about 20% of the value of the lines. Then, take the Radon transform of the noisy image. Try to reconstruct only the grid by only allowing the dominant pixels (or small areas) in the inverse Radon transform.

Turn in the images from part 1 and part 2 as well as a description of your results and code.